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NEW SPECIES OF ROTIFERA FROM THE COLLECTION OF THE AMERICAN MUSEUM OF NATURAL HISTORY

BY FRANK J. MYERS

The collection of Rotifera in the cabinet of The American Museum of Natural History consists, at this writing, of 1009 slides of various species and varieties, which include 111 slides of various trophi and 190 types, spread among 105 genera.

Emphasis has been placed on trophi slides, due to their importance in classification. It is possible to identify many species by an examination of the jaws alone. This is very necessary when it comes to listing illoricated species contained in collections, made in the field, wherein the rotifers have been killed and fixed in a solution of formalin or alcohol without previous narcotization.

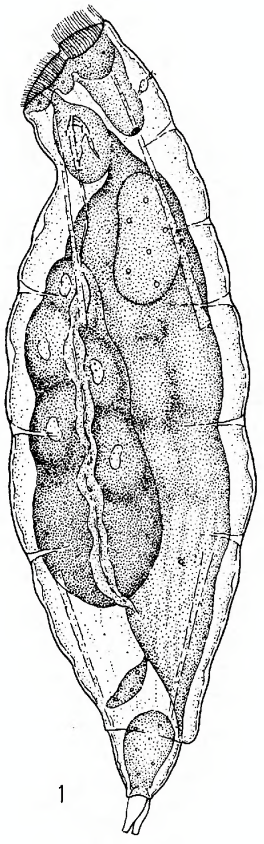
The great majority of rotifers in the collection are mounted in glycerin or glycerin jelly. In only a few very difficult cases has resort been made to 2 per cent formalin, although it is possible to make permanent mounts using that medium.

From time to time slides of undescribed species have been placed in the collection as a safe depository. These have accumulated, so there are now 11 new species and 3 varieties.

The new species and new varieties described in this paper are as follows:

Proales segnis
Lindia gracilis
Notommata cherada
Dicranophorus lenapensis
Lecane pustulosa
Filinia camasecla
Euchlanis dilatata crassa
Dicranophorus spiculatus
Squatinella retrospina
Trichocerca plaka
Trichotria cornuta
Lepadella pyriformis
Keratella cochlearis taurocephala
Keratella cochlearis punctata

No attempt has been made to draw the various species to scale. Some would be so large that, in order to include the smaller ones within the limits of an octavo page, necessary detail could not be reproduced. For actual measurements the reader is referred to the text.



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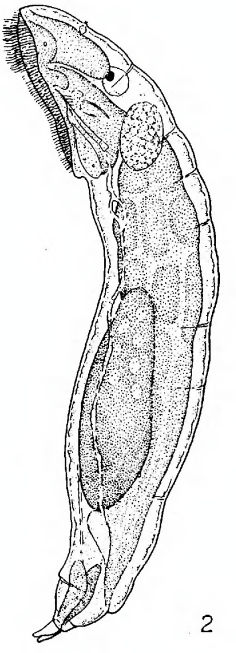

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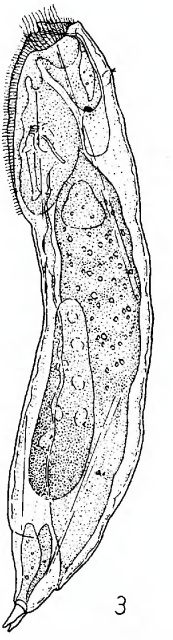

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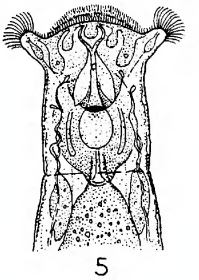

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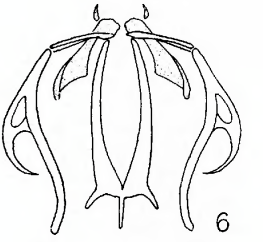

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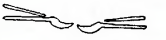

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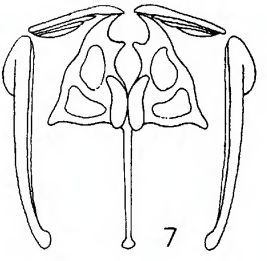

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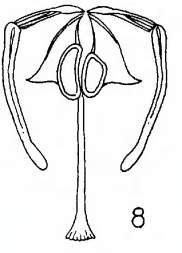

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ORDER MONOGONONTA

Family **Notommatidae**

Proales segnis, new species

Figures 1, 4, 7, 11, 12, 15, 16

The body is cylindric, swollen, and very stout. The integument is soft and flexible, so that the outline constantly changes with the incessant contortions of the individual.

The head is relatively small, and the neck is represented by an indistinct fold. The abdomen is elongate oval and relatively very large. The tail is evanescent and the foot is small and stout, consisting of but one joint. The toes are very short, triangular, and have truncate tips. In dorsal aspect, they are enlarged at the base, then diminish gradually, ending in pinched-in tips.

The dorsal and lateral antennae are normal.

The corona is small and oblique, exhibiting the ciliation normal to the genus.

The mastax is of modified malleate type. The fulcrum is longer than usual, slender, and straight. The rami are broad and triangular and have a large basal apophysis; the median opening is lyrate and each ramus has a prominent, opposing tooth situated at about mid-length. Each uncus has four slender teeth, clubbed at the tips, which gradually decrease in size from the ventral margin. The base of the uncus is produced as a slender, curved reinforcement ridge resting against the dorsal tooth. The median branch of the manubrium is long and slender, having the usual sigmoidal curvature; the ventral branch is nearly as long as the median, while the dorsal branch is very short.

The oesophagus is short. The gastric glands are very large and oval. There is no constriction between the stomach and the intestine, which has a glandular caecum attached to the ventral side near the posterior extremity. The nuclei of the ovary are large and appear to have separate yolk masses. There is no bladder. The foot glands are short and very stout, completely filling the foot.

The ganglion is relatively small, and the minute eyespot is situated at its posterior end. No retrocerebral organ is present.

Total length, 1050μ; toes, 50μ; trophi, 55μ.

HABITAT.—Among *Utricularia*, Parvin State Park, Cumberland County, New Jersey.

Proales segnis is a bottom sprawler. On account of its huge bulk, the

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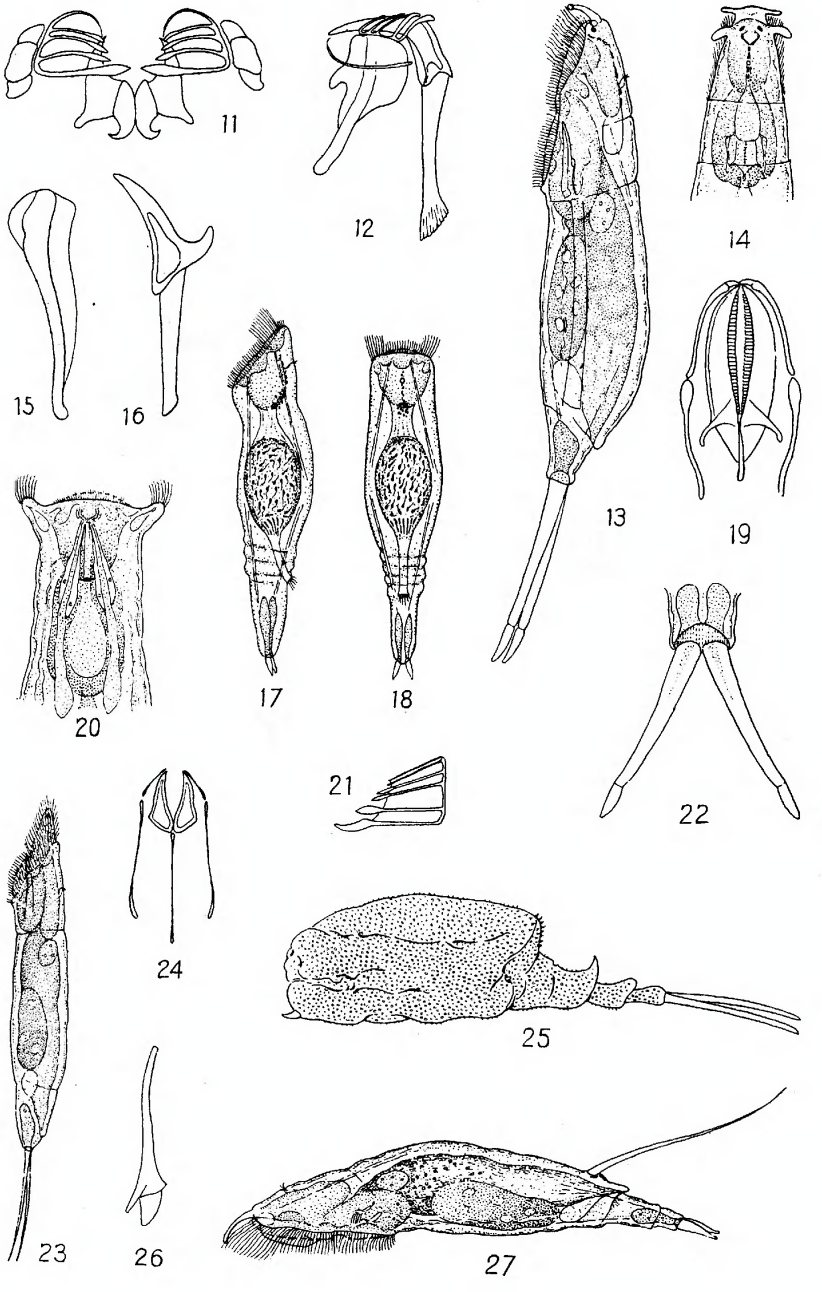
Fig. 1. *Proales segnis*, lateral view.
Fig. 2. *Lindia gracilis*, lateral view.
Fig. 3. *Notommata cherada*, lateral view.
Fig. 4. *Proales segnis*, toes, dorsal view.
Fig. 5. *Notommata cherada*, head, dorsal view.
Fig. 6. *Lindia gracilis*, trophi, ventral view.
Fig. 7. *Proales segnis*, trophi, ventral view.
Fig. 8. *Notommata cherada*, trophi, ventral view.
Fig. 9. *Lindia gracilis*, uncus, frontal view.
Fig. 10. *Lindia gracilis*, manubrium, lateral view.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great size of the abdomen, and the relatively small size of the corona, it seems to have very feeble powers of locomotion. The abdominal gland is unique in this genus. While several rotifers, such as *Enteroplea lacustris* (Ehrenberg) and *Epiphanes clavulata* (Ehrenberg) have caeca-like appendages attached to the stomach, they evidently perform a gastric function while, in this case, the function is probably extra-assimilative, as are those of *Voronkowia miriabilis* Fadeew, which has four.

Proales segnis is so large and distinctive that there is no possible chance of confusing it with any other species of the genus.

Type in The American Museum of Natural History. Cat. No. 918.

Lindia gracilis, new species

Figures 2, 6, 9, 10, 26

The body is slender, elongate, and vermiform. The integument is soft and very flexible. It has a number of obscure transverse folds, giving it an annular appearance.

The head is rather small and the neck segment is indistinct. The abdomen is nearly cylindric and tapers very gradually to the small tail. The foot is short, stout, and triangular. The toes are short, conical, and slightly compressed at the blunt tips.

The dorsal and lateral antennae are normal.

The corona is prone and extends down the ventral side about one-fourth the length of the body; the auricles are small and of the usual type.

The mastax is of the cardate type and is provided with a pair of confluent salivary glands lying in the lateral angles. The rami are lyrate and exceptionally long and slender. The fulcrum is extremely short. The unci have one functional and one rudimentary tooth; the ventral tooth is slightly clubbed and hooked at the tip, while the dorsal rudimentary is a short straight rod resting against the ventral tooth near the tip. The manubria are of the normal form, with a large, crescent-shaped anterior

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Fig. 11. *Proales segnis*, trophi, frontal view.
Fig. 12. *Proales segnis*, trophi, lateral view.
Fig. 13. *Dicranophorus lenapensis*, lateral view.
Fig. 14. *Dicranophorus lenapensis*, head, dorsal view.
Fig. 15. *Proales segnis*, manubrium, lateral view.
Fig. 16. *Proales segnis*, incus, lateral view.
Fig. 17. *Notommata cherada*, male, lateral view.
Fig. 18. *Notommata cherada*, male, dorsal view.
Fig. 19. *Dicranophorus lenapensis*, trophi, ventral view.
Fig. 20. *Notommata diasema*, head, dorsal view.
Fig. 21. *Notommata cherada*, uncus.
Fig. 22. *Dicranophorus lenapensis*, toes, dorsal view.
Fig. 23. *Dicranophorus spiculatus*, lateral view.
Fig. 24. *Dicranophorus spiculatus*, trophi, ventral view.
Fig. 25. *Trichotria cornuta*, lorica, lateral view.
Fig. 26. *Lindia gracilis*, incus, lateral view.
Fig. 27. *Squatinella retrospina*, lateral view.

branch forming an approximate right angle with the median branch which is rather slender, sigmoidal, and decurved; the dorsal branch is nearly as long as the median. The epipharynx consists of two thin, lamellar pieces meeting below the mouth. The anterior portion is hammer-like, while the posterior portion is expanded into two broadly curved, triangular plates.

The oesophagus is very short. The gastric glands are large and vacuolated. There is no separation between the stomach and the intestine. The bladder is small, while the ovary is of the normal elongate form and rather large. The foot glands are quite long and slender.

The ganglion is normal. The retrocerebral organ is reduced to a ductless sac enclosing the eyespot which is filled with red pigment granules.

Total length, 250μ; toes, 10; trophi, 40μ.

HABITAT.—Among submerged aquatics, Pleasant Mills, Atlantic County, New Jersey.

Lindia gracilis bears a superficial resemblance to the other members of the genus. It differs from all of them in the elements of the trophi, especially by the extremely slender, drawn out rami and the much reduced fulcrum.

Type in The American Museum of Natural History. Cat. No. 918.

Notommata cherada, new species

Figures 3, 5, 8, 17, 18, 21

The body is elongate and vermiform. The integument is very flexible, but the outline remains quite constant in the adults.

The transverse fold limiting the neck segment is indistinct. The abdomen is almost parallel-sided; it falls away posteriorly, and ends with hardly any indication of a tail. The foot is stout and obscurely two-jointed. The toes are conical and end abruptly in minute papillose tips. In dorsal aspect, they are close together and somewhat bulbous at the base.

The corona is prone and extends down the ventral side about one-third the length of the body. The auricles are small and the ciliation is continuous with the corona.

The dorsal and lateral antennae are normal.

The mastax is of the virgate type. The fulcrum is long and expanded at the posterior end which is serrate. The rami are roughly triangular and without inner denticulation; the basal apophysis of the right ramus is somewhat larger than that of the left. The unci are symmetric and each has four slender, diminishing teeth clubbed at the tips, followed by two parallel rudimentary teeth. The manubria are somewhat incurved and have a broad, sub-square basal plate. Each dorsal cell has a decurved lobelike projection near the middle of the margin. A pair of curved supporting rods is imbedded in the walls of the mastax behind the posterior margins of the dorsal branch of the rami.

The oesophagus is very short. The gastric glands are large and triangular. The ovary is rather large, and there is no bladder, the cloaca functioning instead. There is no distinct separation between the stomach and the intestine. The foot glands are large and pyriform.

The retrocerebral sac is clear, large, and rounded; the duct is stout and can easily be traced to the outlets on the apical area, which, in this case, is situated low down and is surmounted by a prominent cuticular fold. The sub-cerebral glands are equal to one-half the length of the sac. The ganglion is large and has a round eyespot attached to the posterior end.

Total length, 275–335μ; toes, 12–15μ; trophi, 40μ.

HABITAT.—Among submerged aquatics, Bargaintown, Atlantic County, New Jersey.

Males seemed to be common (Figs. 17–18). The posterior portion of the abdomen is wrinkled, and the foot is long and cylindrical, terminated by two short toes. The ganglion is large. There are remnants of a retrocerebral sac and duct, and the eyespot consists of a rather dense cluster of bacterioids at the posterior end of the ganglion.

The alimentary tract is represented by the usual connecting band between the testis and the corona. There is no bladder. The testis is large and oval; the ductus seminalis is strongly ciliated, and the opening for the copulatory organ is situated at the junction of the striated area of the abdomen and the base of the foot.

Total length, 150μ.

Notommata cherada belongs to that group of notommatid rotifers of similar body shape, having the retrocerebral glands equal to about one-half the length of the sac; such as, *Notommata cerberus* (Gosse), *N. galena* Harring and Myers, *N. thopica* Harring and Myers, *N. codonella* Harring and Myers and *N. parvida* Myers. These species are best differentiated by a comparison of the toes and trophi. Although innumerable collections have been at Bargaintown over a period of years, this species was not met with until the spring of 1937. In young specimens the general shape is quite changeable, frequently resembling that of the male, as shown in lateral aspect in figure 17.

Type in The American Museum of Natural History. Cat. No. 952.

Trichocerca plaka, new species

Figures 30, 31, 33

The body is short, stout, and rounded posteriorly. The head sheath is not very distinctly set off from the abdomen; it is provided with two mucrones, the right being long, triangular, and acute, whilst the left is very short. A low ridge arises at the base of the larger mucro, and the striated area extends down the body for about two-thirds of its length. The foot is rudimentary and ventrally placed. The right toe is about two-thirds the length of the left, and there are a few minute substyles clustered about their bases.

The dorsal and lateral antennae are in the usual positions.

The mastax is of the modified virgate type peculiar to the genus, and the trophi are simple and small. The fulcrum is a long, lamellar plate, expanded posteriorly. The rami are triangular and the alulae are prominent, the left being much larger than the right. The right uncus is provided with a single very slender tooth, whilst that

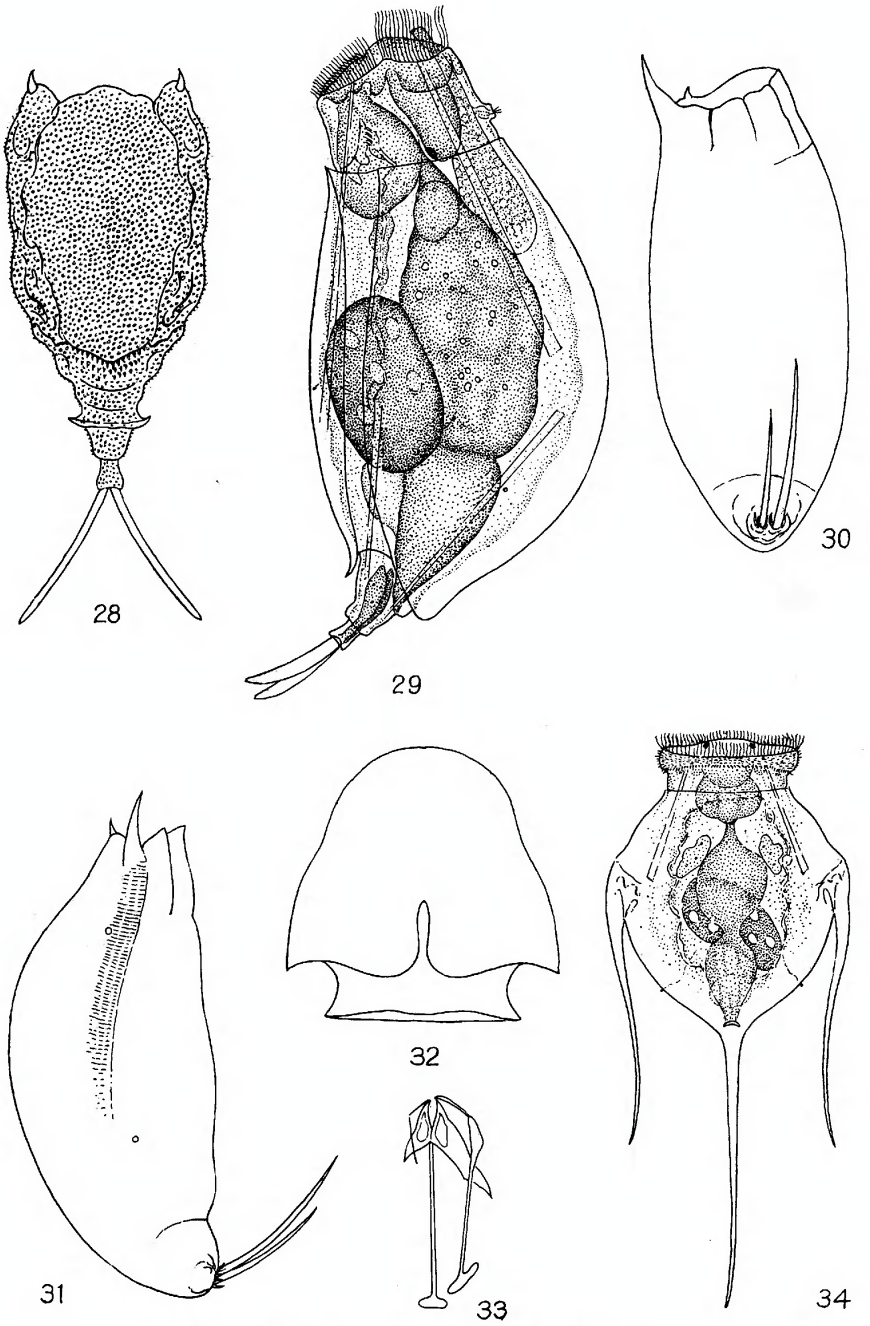

Fig. 28. *Trichotria cornuta*, lorica, dorsal view.
Fig. 29. *Euchlanis dilatata crassa*, lateral view.
Fig. 30. *Trichocerca plaka*, lorica, ventral view.
Fig. 31. *Trichocerca plaka*, lorica, dorsal view.
Fig. 32. *Euchlanis dilatata crassa*, lorica, cross-section.
Fig. 33. *Trichocerca plaka*, trophi, ventral view.
Fig. 34. *Filinia camasecla*, dorsal view.

of the left uncus is longer and stouter. The right manubrium is short, slender, and rudimentary; the left is very long, expanded at the base, and strongly crutched distally.

Length of lorica from tip of longer mucro, 116μ; left toe, 36μ; right toe, 20μ.

HABITAT.—Submerged *Sphagnum* in acid water, Atlantic County, New Jersey.

Trichocera plaka resembles *Trichocerca (Diurella) tenuidens* (Hauer). It differs in being much smaller, by the evanescent foot, in the proportion of the toes, and by having two frontal mucrones instead of one.

Type in The American Museum of Natural History. Cat. No. 954.

Family **Dicranophoridae**

Dicranophorus lenapensis, new species

Figures 13, 14, 19, 22

The body is fusiform, rather stout, somewhat convex dorsally, and nearly straight ventrally. The integument is somewhat stiffened and the outline is constant.

The head is about one-third the length of the body, and is separated from the abdomen by a well-marked neck constriction. The corona is ventral, of about the same length as the head, and has prominent lateral, auricle-like tufts of long cilia adapted for locomotion. The rostrum is long and strongly decurved; dorsally, it has two laterally projecting lappets and at its base are two slender, tactile pseudopods. The abdomen is relatively short and tapers posteriorly to the minute tail. The integument is divided by two lateral sulci into a dorsal and ventral plate. The foot is short, conical, and stout. The toes are straight and long, stout at the base, then tapering gradually and terminating in well-marked claws. In dorsal aspect, the claws do not lie in the axis of continuation indicated by the angle made by the toes, but a bending in, or change of direction occurs at their junction, so that the angle of the claws is narrower than that of the toes.

The mastax is of the forcipate type, and the trophi are robust. The rami are lyrate and obtusely pointed at the base; the inner margins are provided with a denticulate comb, consisting of about 30 fine blunt teeth. The fulcrum is very short, being only about one-eighth the length of the rami. The alulae are elongate, triangular, projecting, and decurved at the tips. The unci are very long and slender, ending in a single and slightly curved tooth, at the base of which is an enlargement resting on the rami and serving as a hinge in the movements of the trophi. The manubria are very short, about one-half the length of the incus, slightly curved, and stoutly knobbed anteriorly.

The gastric glands are small and oval. The stomach and intestine are not distinctly separated. The ovary and bladder are normal. The foot glands are short and stout.

The retrocerebral sac is rather small, and the ducts can easily be traced to the openings on the buccal field. At the base of the rostrum are two eyespots.

Total length, 350μ; toes, 90μ; trophi, 50μ.

HABITAT.—Among *Fontinalis* growing at the base of *Sparganium* stalks, Lenape Lake, Atlantic County, New Jersey.

Dicranophorus lenapensis belongs to that group of large dicranophorid

rotifers which include *Dicranophorus thysanus* Harring and Myers, *D. isothes* Harring and Myers and *D. saevus* Harring and Myers, all of which are provided with tactile pseudopods. The salient differences between these are in the trophi, the number of pseudopods, and the relative length of the toes. The toes of *D. thysanus* and *D. isothes* are relatively short and without claws; the former has three and the latter has two tactile pseudopods, while the trophi are very different from each other or any others of the group. *Dicranophorus saevus* has one tactile pseudopod, while the toes are very long and provided with claws. The fulcrum of *D. lenapensis* is the shortest, relatively, of any species of the genus.

Type in The American Museum of Natural History. Cat. Nos. 892, 893.

Dicranophorus spiculatus, new species

Figures 23, 24

The body of this small species is elongate, very slender, cylindric, and almost parallel-sided; the integument is quite stiff and the outline is very constant.

The neck is long and separated from the abdomen by a marked constriction. The corona is prolonged anteriorly into a conelike projection which is completely ciliated and continues ventrally, making the sub-prone corona nearly as long as the head. There is no rostrum present. The abdomen is elongate and tapers posteriorly to the minute tail. The foot is short and stout. The toes are long, very slender, slightly decurved, and gradually diminish in width, ending in extremely slender tips.

The mastax is of the forcipate type, and the trophi project slightly from the mouth opening. They are very small and feeble, but remarkable on account of the great length of the fulcrum in a genus wherein the fulcrum is usually short. The rami are lyrate and terminate in simple incurved tips; neither alulae nor inner marginal teeth are present. The fulcrum is about twice the length of the rami and very slender. The single-toothed unci are long and slender. The manubria are long, slender, and slightly enlarged at the posterior tips.

The stomach and intestine are without distinct separation. The ovary, gastric glands, and bladder are normal. The foot glands are quite large and pyriform.

The ganglion is very long, extending posteriorly somewhat beyond the neck constriction. There is no retrocerebral organ present. A pair of small eyespots are situated near the apex of the cone-shaped corona.

Total length, 104μ; toes, 24μ; trophi, 18μ.

HABITAT.—Among *Fontinalis* growing at the base of *Sparganium* stalks, Lenape Lake, Atlantic County, New Jersey.

Dicranophorus spiculatus is the smallest member of the genus. The corona is very characteristic. This feature, together with the long fulcrum and toes, readily distinguish it from any of the other species of the genus.

Type in The American Museum of Natural History. Cat. No. 907.

Family **Brachionidae**

Squatinella retrospina, new species

Figure 27

The body is elongate, fusiform, and fairly stout; strongly convex dorsally and straight ventrally. The integument is very flexible and the usual lorica is apparently absent. The whole animal is very transparent. The head is deflexed and separated from the abdomen by a well-marked constriction. The corona is prone, evenly and strongly ciliated, and is provided with lateral tufts of long, locomotor cilia, the whole organ resembling that of *Notommata*. The head is protected dorsally by the usual head-hood, but in this case it is much narrower than in other members of the genus. Laterally, it appears hooklike and resembles the rostrum of the dicranophorid rotifers. It is wholly anterior to the head, very transparent, and constricted at the base.

The abdomen is elongate, deepest at about one-third length, from whence it tapers gradually to the minute tail. Situated near the posterior limit of the abdomen, a short distance in front of the tail is a long, curved spine, fairly stout at the base, after which it gradually diminishes in width to an excessively slender tip. The foot is quite long, conical, and composed of two joints. The toes are short, slender, acute, and almost straight.

The mastax is of modified malleate type, and there are 7 or 8 slender teeth in each uncus.

The oesophagus is very short. The gastric glands are small and oval. The bladder and ovary are normal. The foot glands are equal in length to the toes.

The ganglion is long and saccate, and there are no eyespots.

Total length, 152μ; toes, 12μ; dorsal spine, 50μ.

HABITAT.—Among submerged *Sphagnum*, Atlantic County, New Jersey.

Squatinella retrospina, while having the same habits of locomotion as the other species of the genus, differs from all of them by the absence of a lorica, eyespots, and in the position of the dorsal spine.

Type in The American Museum of Natural History. Cat. No. 501.

Trichotria cornuta, new species

Figures 25, 28

The integument is only slightly stiffened. The anterior portion is characterized by two robust spines situated at the lateral angles, very conspicuous when the rotifer is fully contracted. The entire lorica is stippled and marked by exceedingly fine areolations. The only spines present are situated at the postero-dorsal extremity of the abdomen. The last body segment is characterized by a stiff, recurved ridge extending the entire width of the posterior margin of the lorica. There are no condyles on the basal foot joint, as is usually the case in the genus.

The mastax is of the malleate type, and the anatomy is normal to the genus.

Total length, 168μ; toes, 55μ. Width between anterior spines, 60μ; body, 80μ.

HABITAT.—Submerged *Sphagnum*, Atlantic County, New Jersey.

Trichotria cornuta may be called common, but it is never abundant, occurring here and there in many collections. *Trichotria eukosmeta*

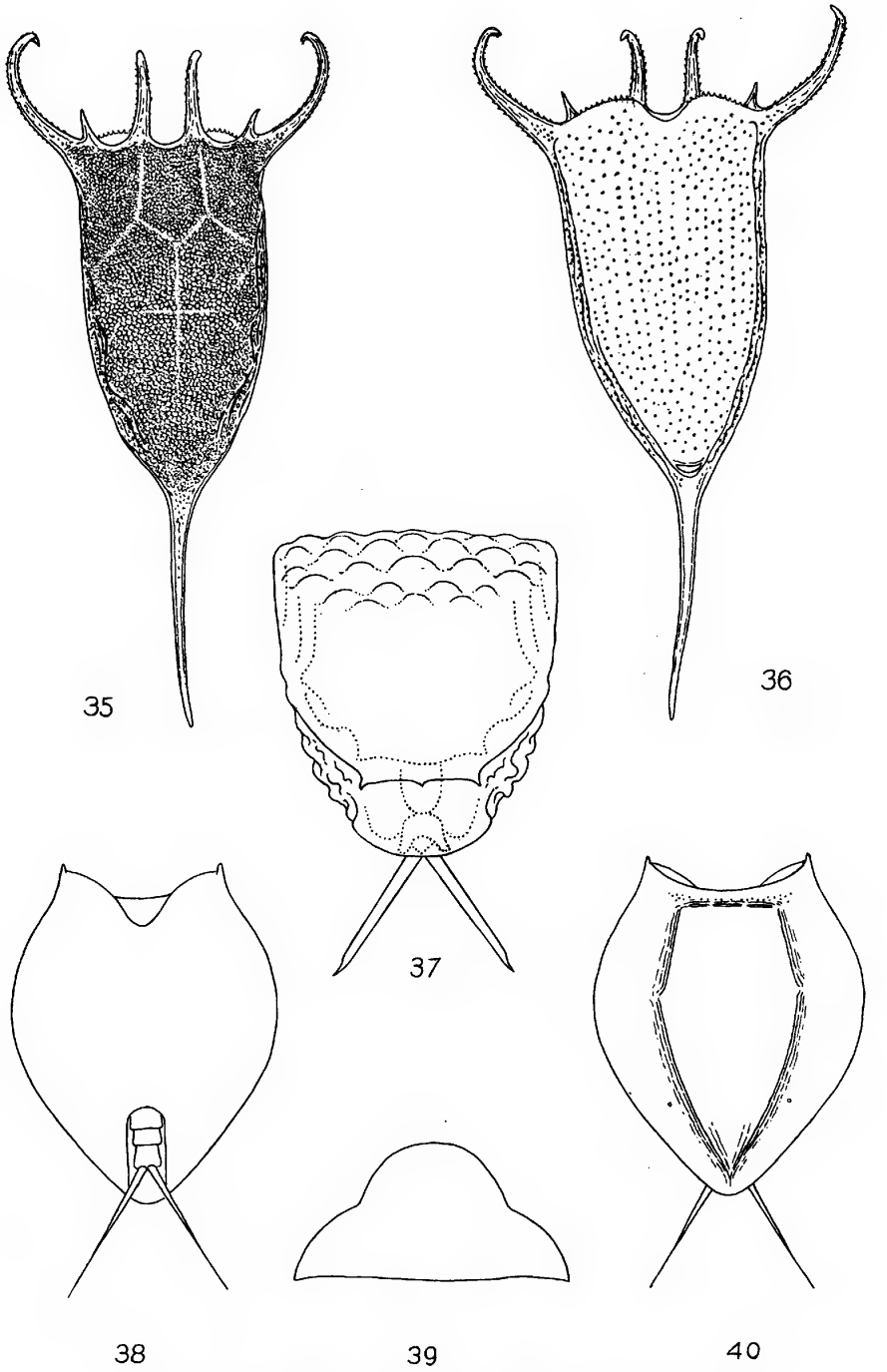

Fig. 35. *Keratella cochlearis taurocephala*, dorsal view.
Fig. 36. *Keratella cochlearis taurocephala*, ventral view.
Fig. 37. *Lecane pustulosa*, lorica, dorsal view.
Fig. 38. *Lepadella pyriformis*, lorica, ventral view.
Fig. 39. *Lepadella pyriformis*, lorica, cross-section.
Fig. 40. *Lepadella pyriformis*, lorica, dorsal view.

Myers also has a soft lorica, but that species is psammobiotic and has a pair of condyles on the basal foot joint, besides the toes are relatively much shorter.

Type in The American Museum of Natural History. Cat. No. 512.

Lecane pustulosa, new species[1]

Figure 37

The outline is broadly reverse-ovate. The integument is quite flexible, but the form is constant. The anterior margins are coincident and nearly straight; no spines are present at the antero-lateral angles. The surface markings of the dorsal plate are peculiar; they consist of a series of bosses arising near the anterior margin and diminishing posteriorly for about one-third the length of the plate, leaving the remainder free from markings. The ventral plate is as wide as the dorsal, and the lateral sulci are evanescent. The coxal plates are oval and poorly defined. The first foot joint is indistinct; the second is roughly triangular and does not project beyond the lorica. The posterior lobe is round and strongly projecting. The toes are rather long, slender, and straight, terminating in short, acutely pointed pseudo-claws.

Length of lorica, 52μ; dorsal plate, 38μ; toes, 23μ. Width of anterior margin, 45μ.

HABITAT.—*Hygropsammon*, Lenape Lake, Atlantic County, New Jersey.

Lecane pustulosa is easily recognized when seen, as there is no other member of the genus with similar markings on the dorsal plate.

Type in The American Museum of Natural History. Cat. No. 980.

Lepadella pyriformis, new species

Figures 38, 39, 40

The body is pyriform in outline, the greatest width being just above the middle, from whence it narrows gradually to a rounded posterior angle. Near the anterior margin of the dorsum, an elevation arises very suddenly which increases in width for a short distance then gradually diminishes, ending in a low flange. The dorsal sinus is shallow and concave and is surrounded by a faintly stippled collar. The ventral sinus is roughly V-shaped, the lateral margins of which are convex, with the apex of the V rounded. The foot groove is parallel-sided throughout. The foot is rather short, and the terminal joint somewhat longer than either the basal or the second joints. The toes are very long; they diminish gradually for about one-half of their length and are continued as extremely slender, drawn-out tips.

Length of lorica, 96μ; foot groove, 18μ; terminal foot joint, 8μ; toes, 40μ. Width lorica at widest point, 78μ; anterior points, 38μ. Depth lorica, 48μ; anterior sinus, 8μ; ventral sinus, 14μ.

HABITAT.—Among submerged *Sphagnum*, Tamaque Lake, Pocono Plateau, Monroe County, Pa.

Lepadella pyriformis is closely related to *L. xenica* Myers. It differs from that species in the shape of the lorica, the depth of the lorica, shape

[1] In order to save duplication of figures, details lying below the dorsal plate are shown by dotted lines.

and depth of the dorsal and ventral sinus, shape of the foot groove, and the shape of the toes. The median elevation of the dorsal plate arises very suddenly anteriorly and is preceded by a short collar, whilst that of *Lepadella xenica* arises gradually from the anterior margin.

Type in The American Museum of Natural History. Cat. No. 992.

Euchlanis dilatata var. **crassa,** new variety

Figures 29, 32

This variety differs from *Euchlanis dilatata* Ehrenberg, in the great depth of the lorica and the very short toes. All of the remaining characters, including those of the trophi, agree with that species.

HABITAT.—Plankton collections from Penask and Nicola Lakes, Kamloops region, British Columbia. "Mariensee" near Danzig, Germany.

Measurements of average specimen from British Columbia: length lorica, 250μ; toes, 50μ; depth lorica, 135μ. Specimens from near Danzig: length lorica, 294μ; toes, 65μ; depth lorica, 197μ.

Type in The American Museum of Natural History. Cat. No. 967.

Keratella cochlearis var. **taurocephala,** new variety

Figures 35, 36

This variety is characterized by the widely divergent antero-lateral spines. The pattern of the dorsum follows that of *Keratella cochlearis* (Gosse), by being disposed into facets mesially divided, the enclosed areas being delicately marked by minute reticulations. The mental edge of the ventral plate is membranous and finely denticulate. The venter is covered by minute pustules following no definite pattern.

Length of antero-lateral spines, 46μ; length of lorica, from base of antlers to the anal vent, 108μ; length of posterior spine, 82μ. Width between tips of antero-lateral spines, 120μ; lorica, 75μ.

HABITAT.—Maine, New Hampshire, New Jersey, Pennsylvania, Florida, Wisconsin, Michigan.

Keratella cochlearis taurocephala has been known since 1915. At that time specimens were sent to Mr. Charles Rousselet, who suggested creating a new species for it. It has been held in abeyance ever since. In response to several requests from limnologists the variety is hereby named.

Type in The American Museum of Natural History. Cat. No. 993.

Keratella cochlearis var. **punctata,** new variety

This variety is slightly smaller than the preceding, and differs from it in that the areas enclosed by the facets are uniformly covered by minute pustules instead of reticulations.

Length of antero-lateral spines, 42μ; length of lorica, from base of antlers to anal

vent, 98μ; length of posterior spine, 74μ. Width between tips of antero-lateral spines, 110μ; lorica, 64μ.

HABITAT.—Same as preceding.

Type in The American Museum of Natural History. Cat. No. 994.

Family **Testudinellidae**

Filinia camasecla, new species

Figure 34

The shape of the lorica is roughly quadrilateral, truncate anteriorly, and angular posteriorly. The integument is somewhat stiffened so that the shape of the body is very constant. There are three spines of medium length, all slightly enlarged at the base; two laterals, situated near the middle of the body length, and one terminal. The lateral spines are not actuated by special muscles. During locomotion they lie close to the body; when the head is retracted they are forced out at right angles by hydrostatic pressure. The remainder of the anatomy is normal to the genus.

Length of lorica, 84μ; posterior spine, 90μ; lateral spines, 86μ. Width of lorica, 78μ.

HABITAT.—Gatun and Mireflores lakes, Panama, June and July, 1924.

Filinia camascela somewhat resembles *Filinia brachiata* (Rousselet), but differs in the following particulars: The body is smaller (Rousselet gives the body length of *F. brachiata* as 95μ). The general shape of the body is different, that of *F. brachiata* being elongate oval; the length of the spines is relatively much longer and they are not nearly as stout at the base. The posterior spine of *F. camascela* is terminal, while that of *F. brachiata* is not quite terminal, but stands out on the ventral side a little above the posterior limit of the lorica.

Type in The American Museum of Natural History. Cat. No. 954.

NOTES ON SPECIES

PSEUDOPLOESOMA, NEW GENUS

Ploesoma formosum MYERS, 1934, American Museum Novitates, No. 700, pp. 4, 5, 6, 7, Figs. 2, 3, 4.

Ploesoma formosum differs in so many particulars from the characters of the genus *Ploesoma* that a new generic name is hereby proposed. The differences are:

1.—No frontal palps of the corona, as in other species of the genus.

2.—The dorsal antenna emerges from a frontal sub-square notch, and not from an oriface situated on the dorsum.

3.—The venter is confluent, not cleft.

4.—The foot emerges from an oval opening, and not from the ventral cleft.

5.—The foot is composed of telescopic segments, not transversally wrinkled.

6.—The mastax is of the virgate type, and not secondarily adapted for prehension.

7.—The presence of the juxta-buccal protuberances, evaginated in the central portion, are unique among the known rotifera.

8.—The dorsum is cleft longitudinally.

9.—The adults are pigmented an orange-red.

10.—Found only in supra-acid associations of p_H 4.0–6.8.

Notommata diasema Myers

Figure 20

1937, American Museum Novitates, No. 830, pp. 11, 12, Figs. 5, 9, 16.

During the summer of 1937 this species was found in such numbers that an examination of living material, stained with brilliant cresyl blue, revealed a secondary pair of sub-cerebral glands over twice as long as the primary pair, and extending some distance below the retrocerebral sac. This condition is unique in the genus *Notommata*.

Dicranophorus thysanus Harring and Myers

MALE.—The male of this species is somewhat smaller, but otherwise the general shape is an exact replica of the female. Of the alimentary tract only the connecting band between the testis and the corona remains. There is no bladder. The testis is rather small and globular and the ductus seminalis is without terminal cilia. Situated just in front of the testis is a black, globular mass crowded with opaque granules.

Total length, 325μ; toes, 45μ.

Type in The American Museum of Natural History. Cat. No. 886.

FEEDING HABITS OF *DICRANOPHORUS THYSANUS* AND *DICRANOPHORUS ISOTHES*

Dicranophorus thysanus HARRING AND MYERS, 1929, Trans. Wis. Acad. Arts, Science, XXX, pp. 710, 711, Pl. XXVII, Figs. 1, 2, 3.

Dicranophorus isothes HARRING AND MYERS, 1929, Trans. Wis. Acad. Arts, Science, XXX, pp. 708, 709, 710, Pl. XXVII, Figs. 6, 7, 8, 9.

Among the members of the genus *Dicranophorus* the above two rotifers stand out, not only on account of their large size, but also on account of their interesting habits.

Both are acid-water animals and are generally found among submerged *Sphagnum*.

Dicranophorus isothes feeds only on small *Cladocera*, such as *Alona* and *Chydorus*. Its method of procuring food is very interesting. It pounces upon its prey with great rapidity and feels it all over. It seems that the frontal tactile processes are an adaptation serving this purpose. As this species only feeds on *Entomostraca* having a bivalve carapace, it thrusts its head between the valves, either on the ventral side or the posterior portion. In response to this irritation the cladoceran contracts the valves vigorously, frequently squeezing the rotifer's

neck quite flat. *Dicranophorus isothes* does not seem to mind this, however, but patiently waits until the cladoceran begins to tire and relaxes the valves a little. The rotifer now thrusts its head in a little farther. This keeps up until the intestine is reached, when the powerful jaws are thrust out and the rotifer begins to feed, not desisting until the carapace of the cladoceran is completely emptied.

As opposed to the above method of feeding, the habits of *Dicranophorus thysanus* are contrasted. While its jaws are also of the forcipate type and partly prehensile, it has never been observed to use them on living animals, as it feeds only on carrion. It immediately attacks dead *Entomostraca* and aquatic worms, devouring everything except the carapace, or cuticle. If a number of the rotifers are placed in a container and a crushed *Daphnia* or pieces of worms, such as *Nais*, are introduced, the rotifers will at once swarm around the remains and consume them.

Owing to this habit, it is easy to culture these species. All that is necessary is to keep the water containing them fairly pure, provide them with the proper food, and maintain the proper p_H value.

CORRECTION

Pseudonotholca japonica MARKAWA, 1928, Annot. Oceanograph Res. Tokyo, 2 (I): (3), 2 figs.

Notholca quadrispinata MYERS, 1936, Trans. Amer. Micro. Soc., LV, No. 4, p. 432, Fig. 9.

The latter species is plainly a synonym for Markawa's animal.